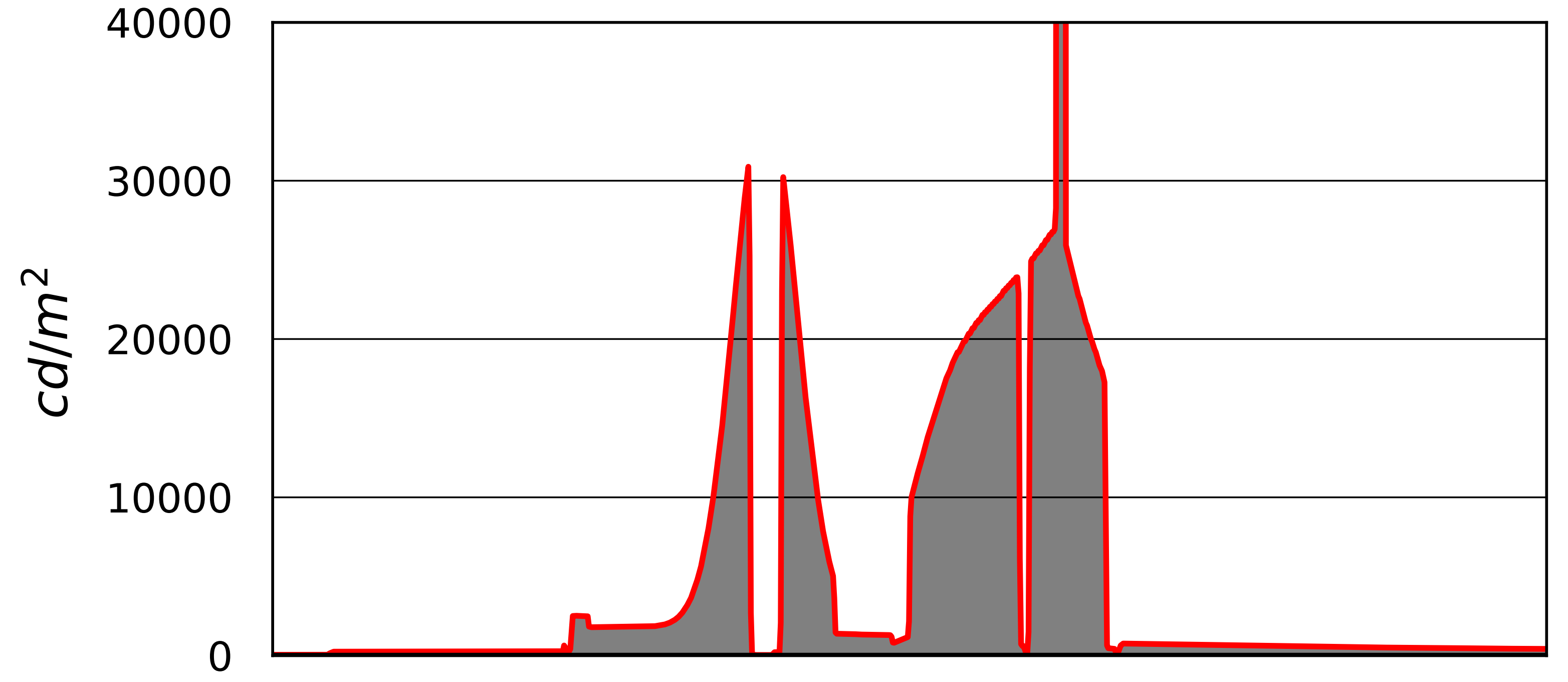
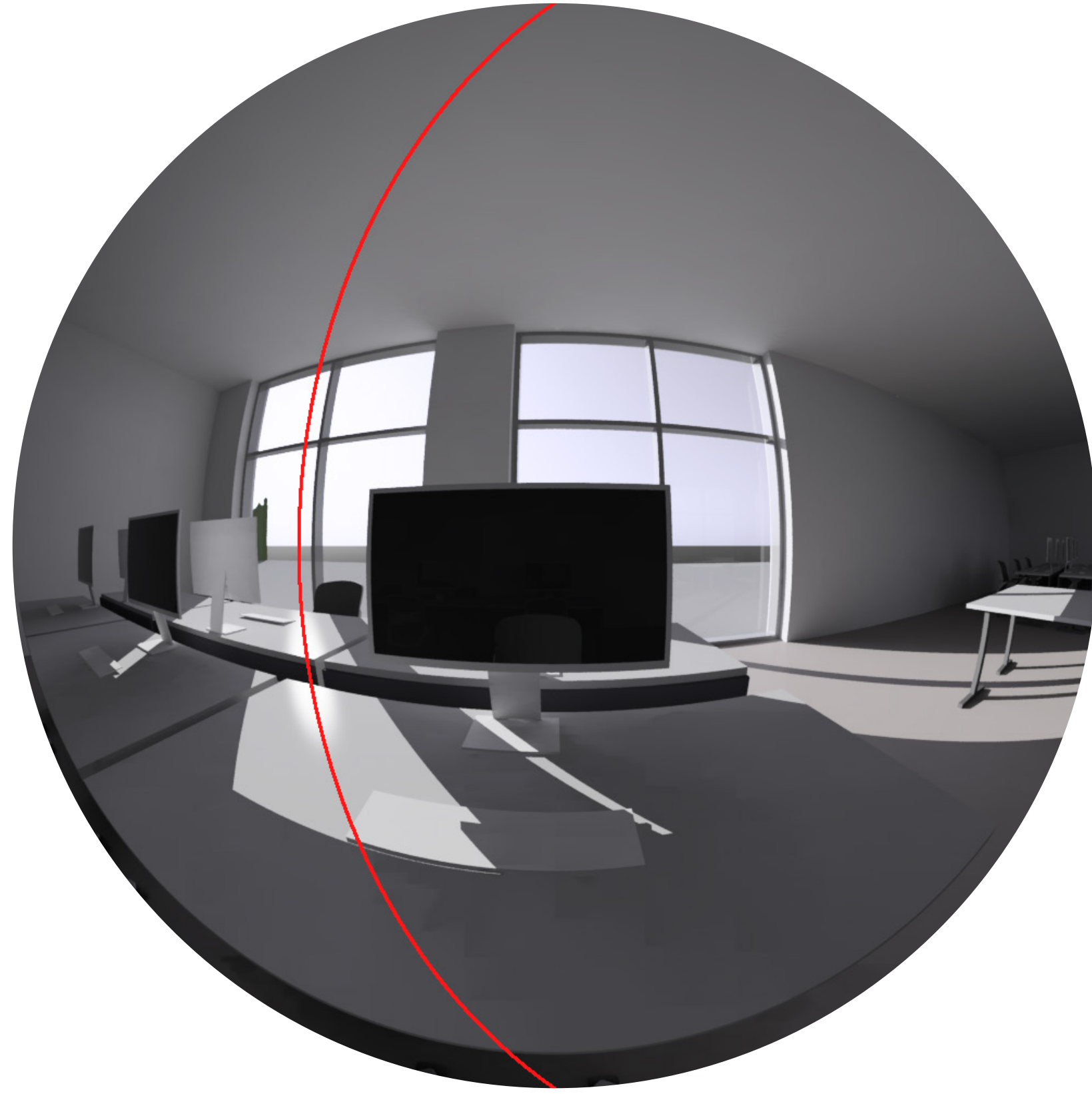
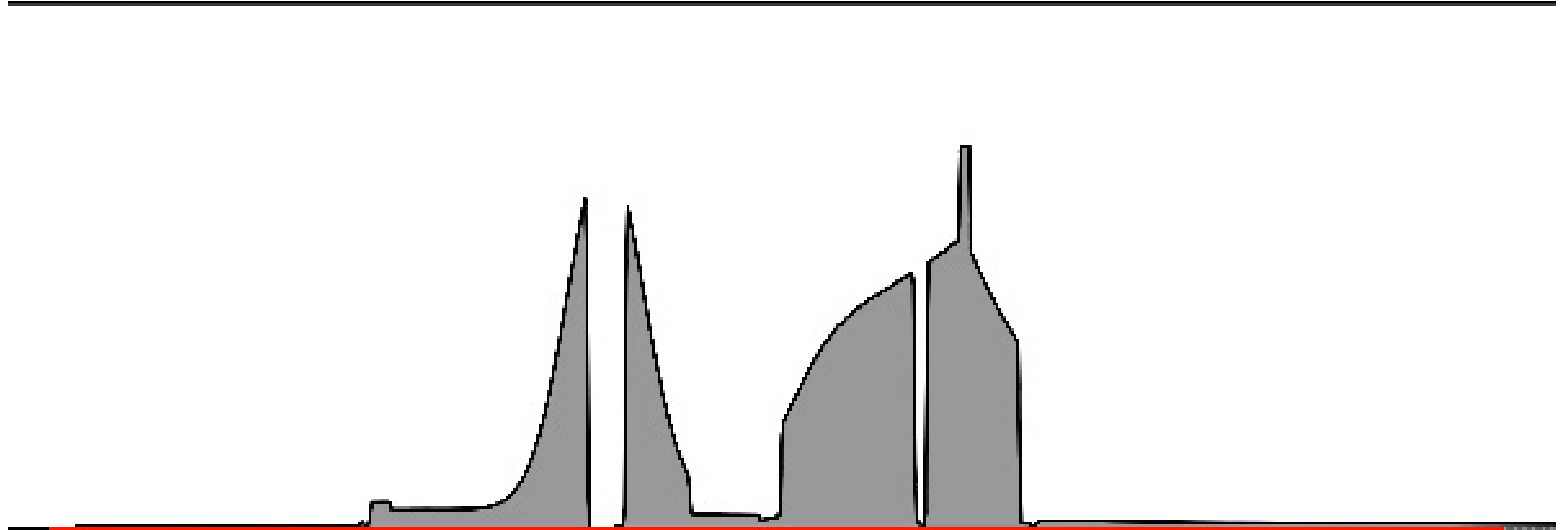


Using raytraverse to render high accuracy images  
stephen wasilewski



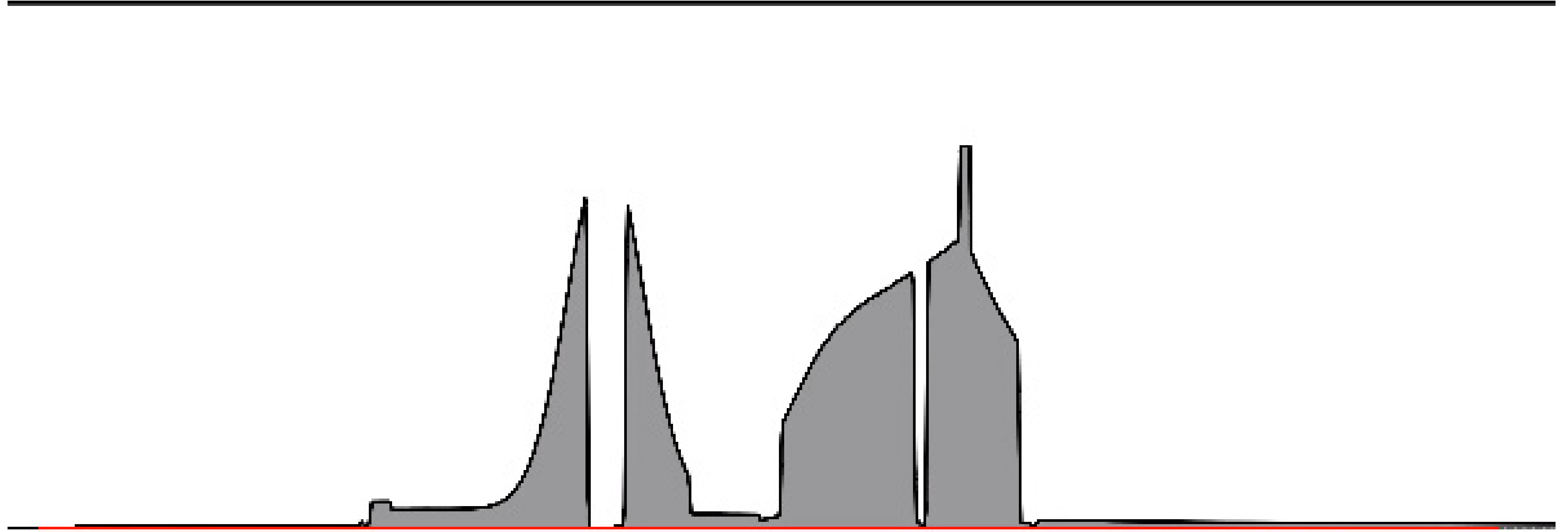
Total Samples: 16  
RMSE: 7256

■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation

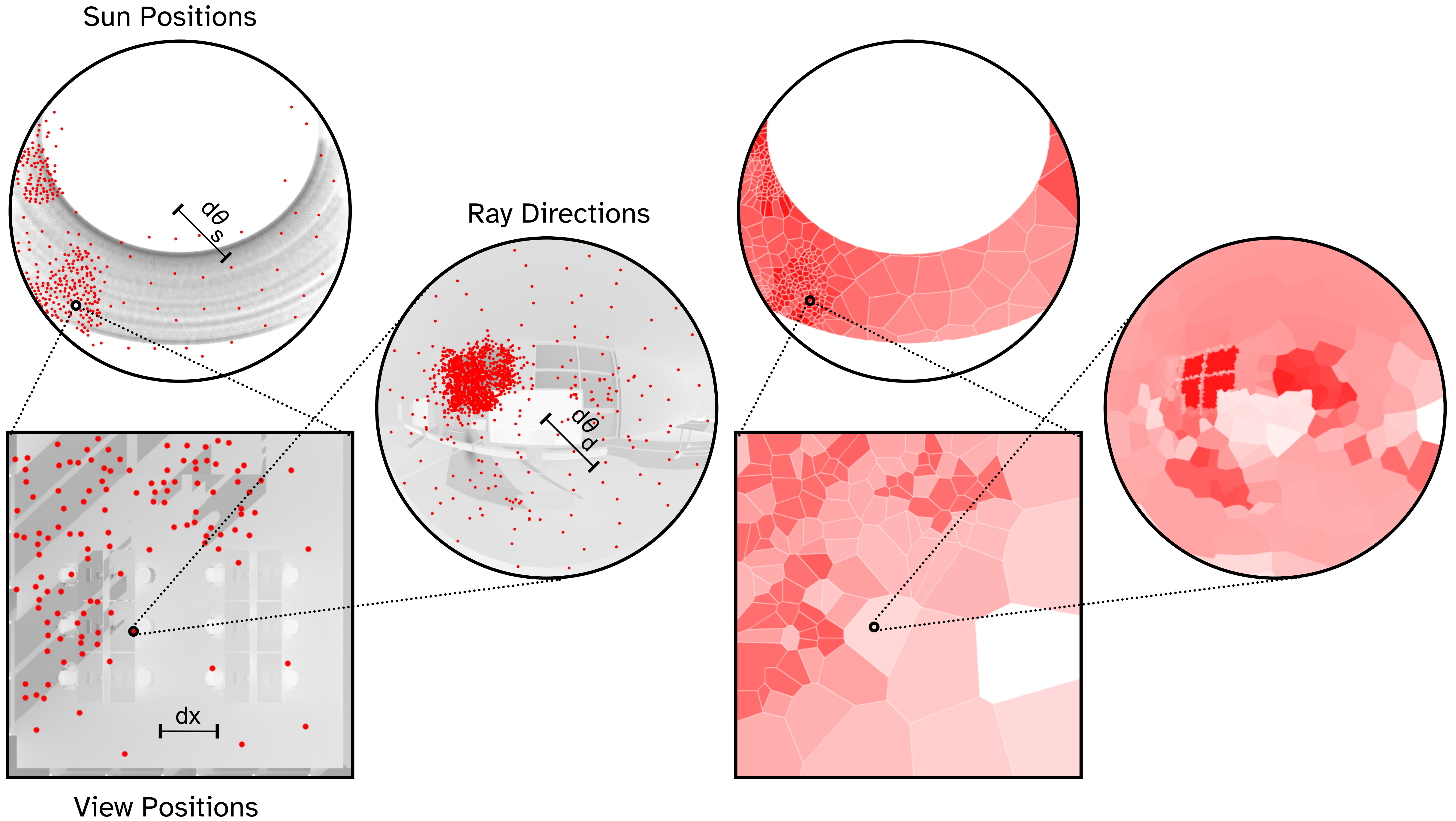


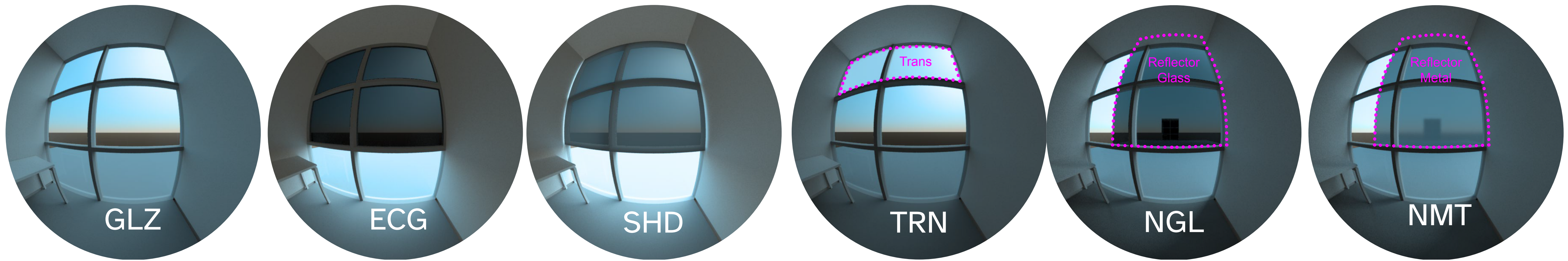
Total Samples: 16  
RMSE: 5154

■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



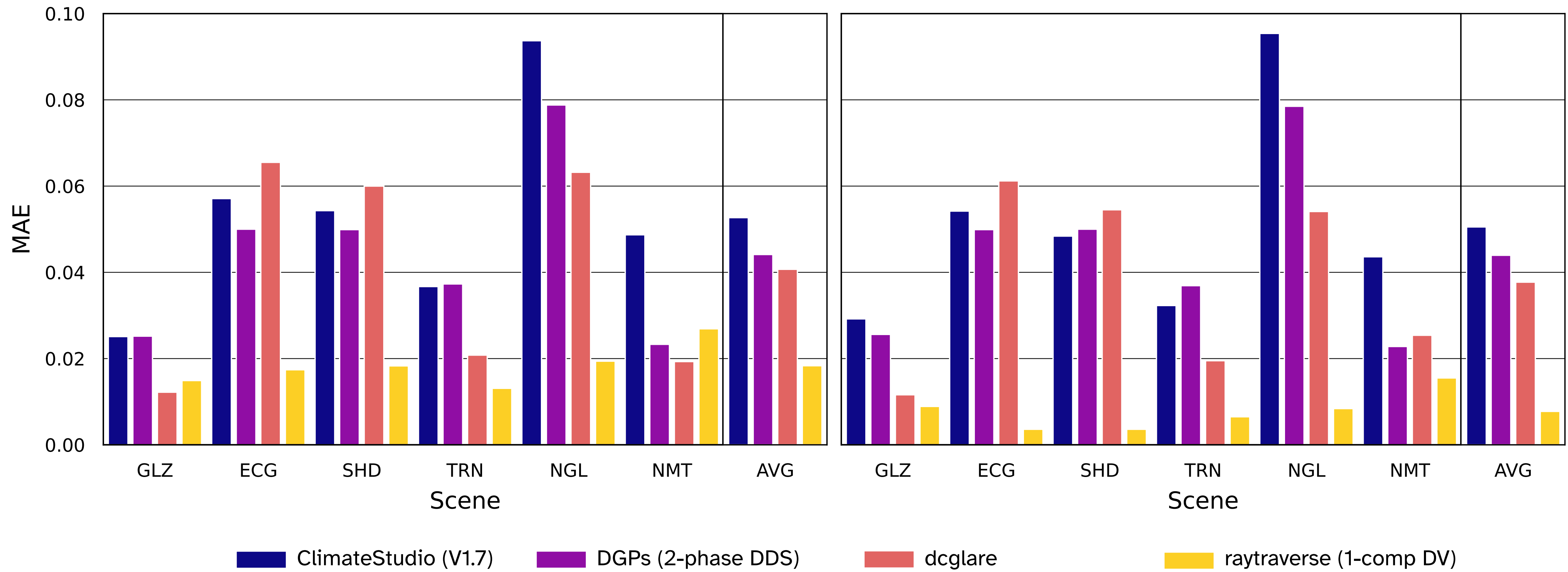
■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation





Timing Near ClimateStudio (V1.7) Default

Timing Near Raytraverse Default



■ Traversing Time Dependent Light Fields for Daylight Glare Evaluation

■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



Typical Metric Quality (sky-patches)



High Quality Image

■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



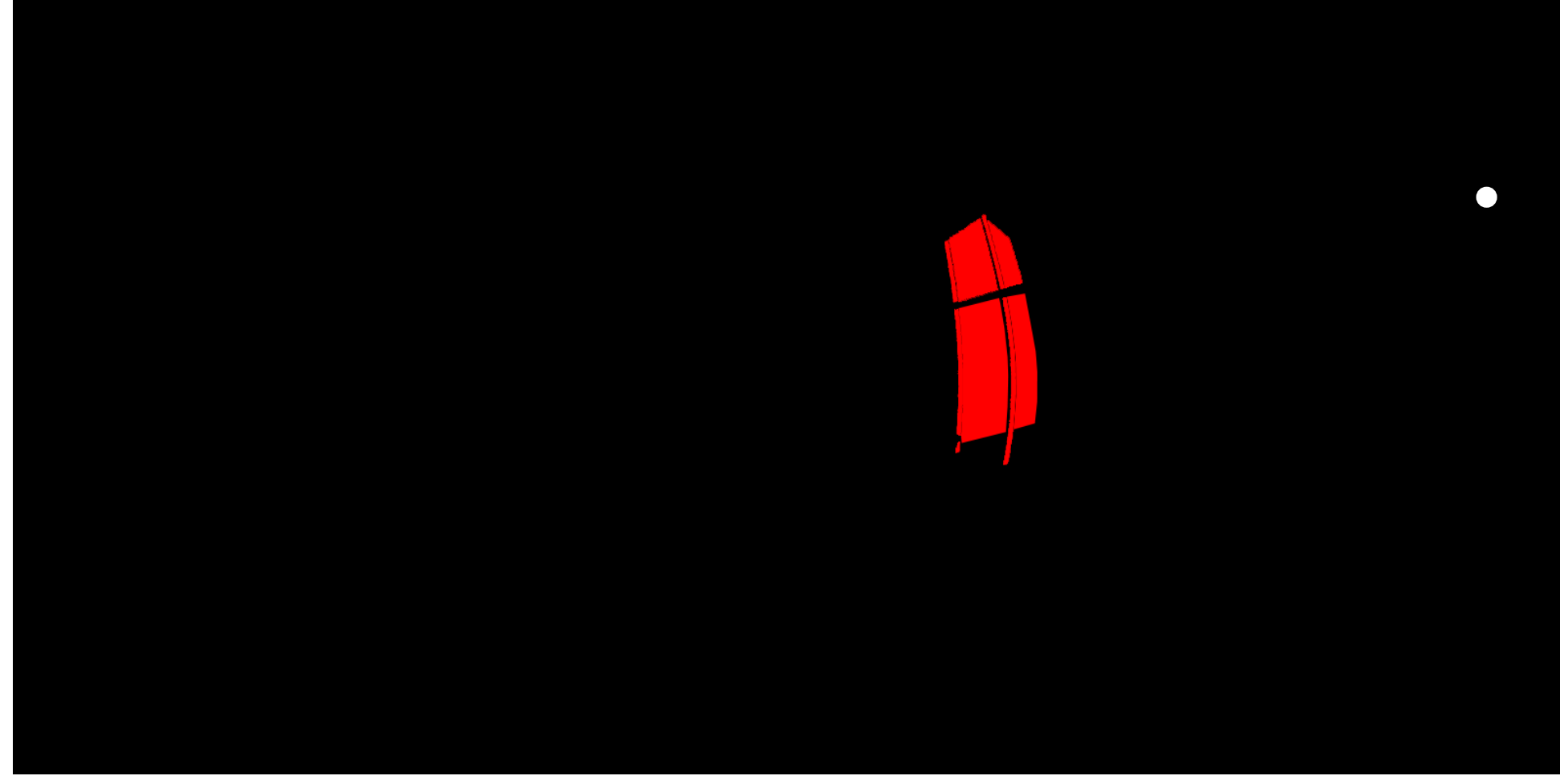
Typical Metric Quality (sky-patches)



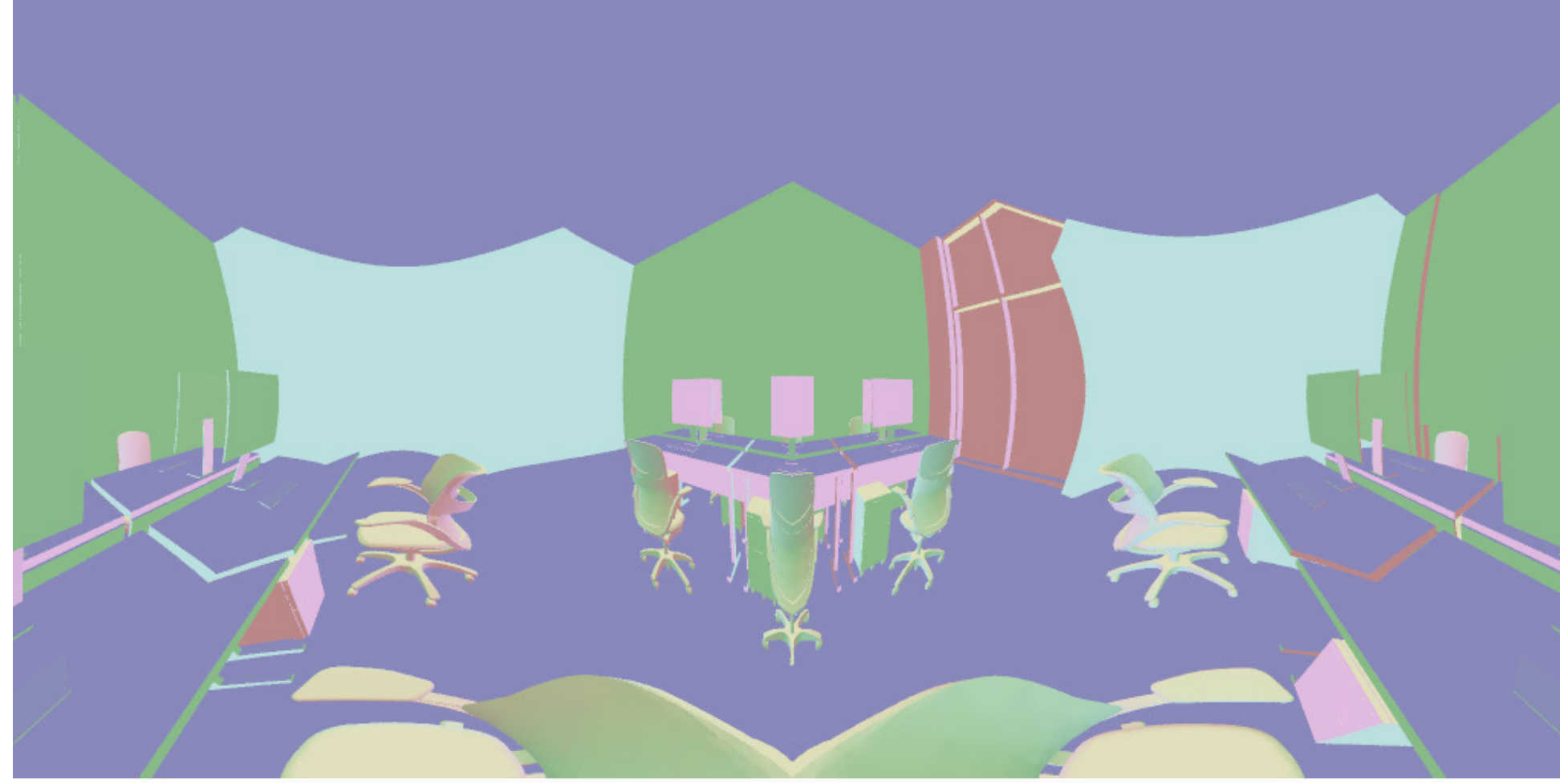
With Interpolation



Sun Position  
and reflecting  
normals



Surface  
Normal



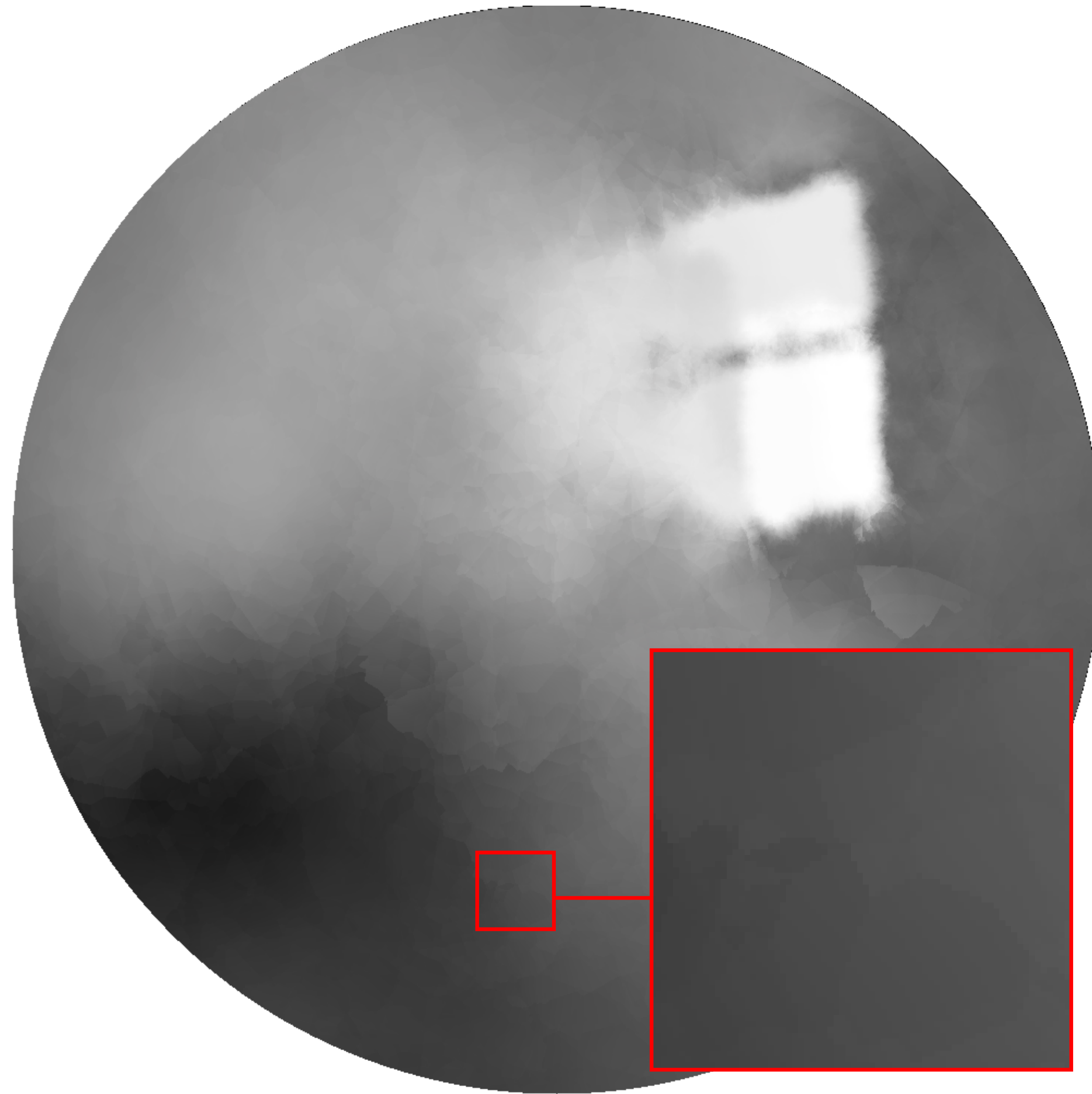
Material ID



Distance



■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



With Interpolation

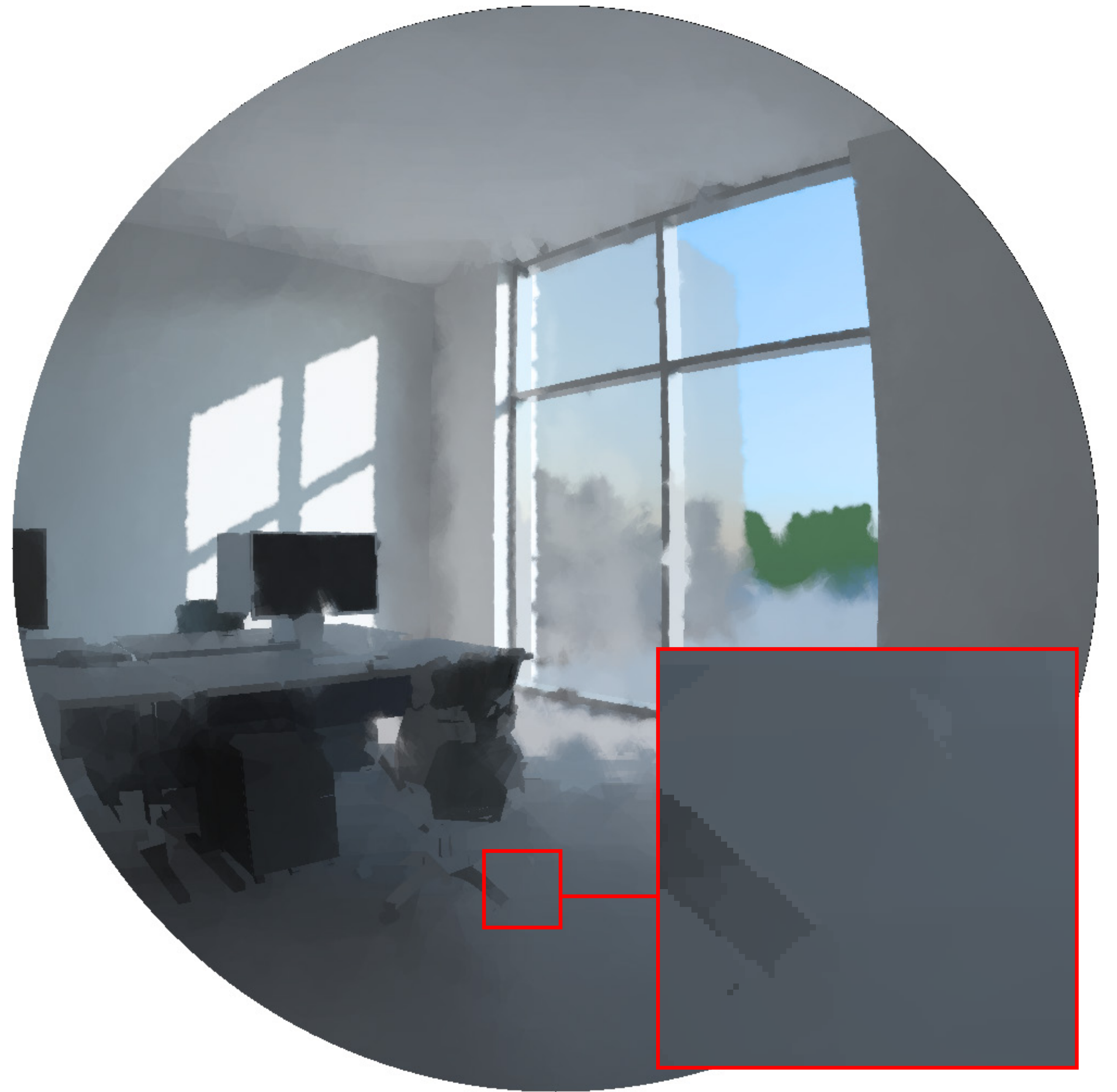


With Geometry Aware Interpolation

■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation

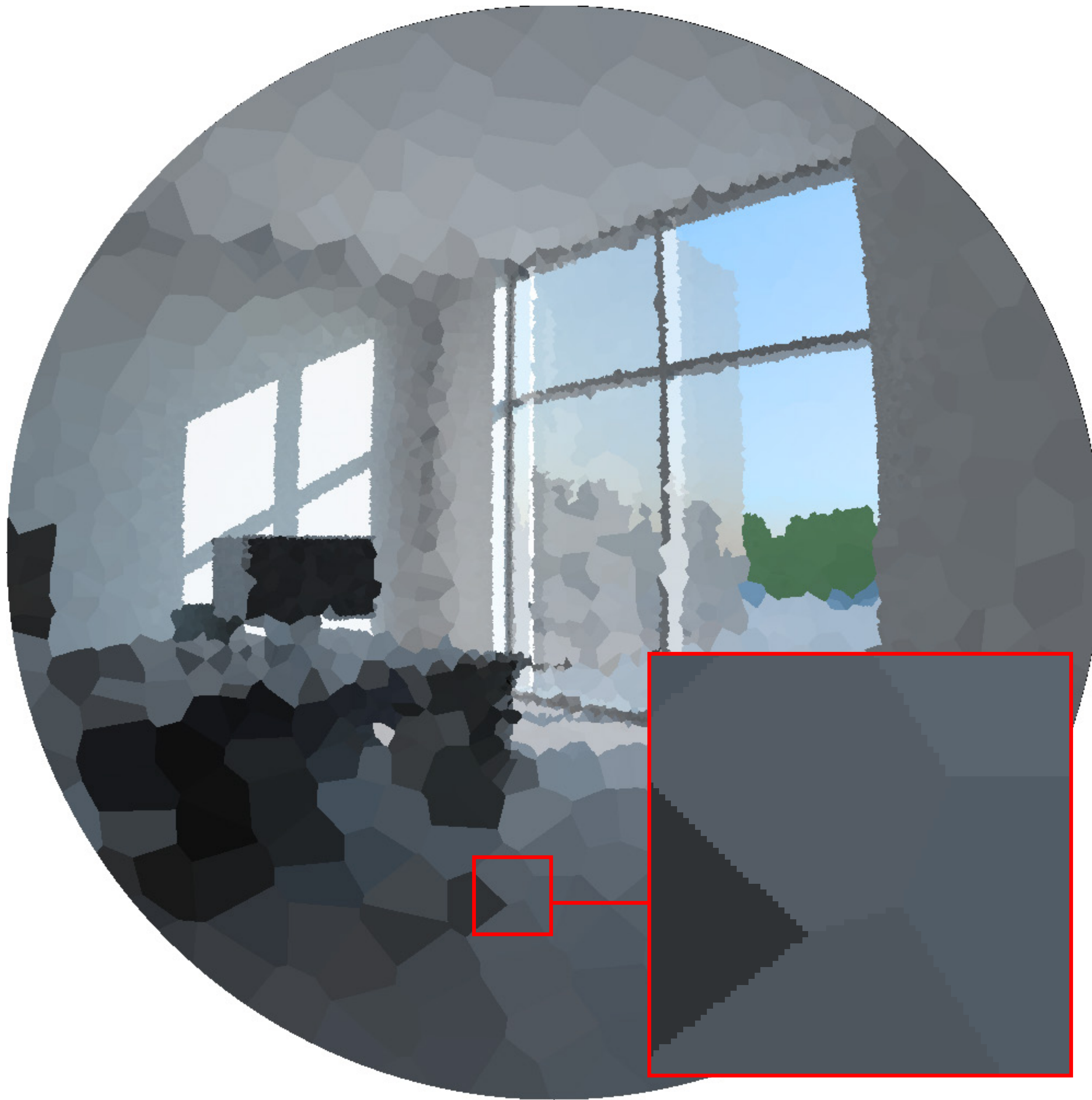


With Geometry Aware Interpolation



With sky+sun definition

■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



Typical Metric Quality (sky+sun definition)



Increased Sampling Rates

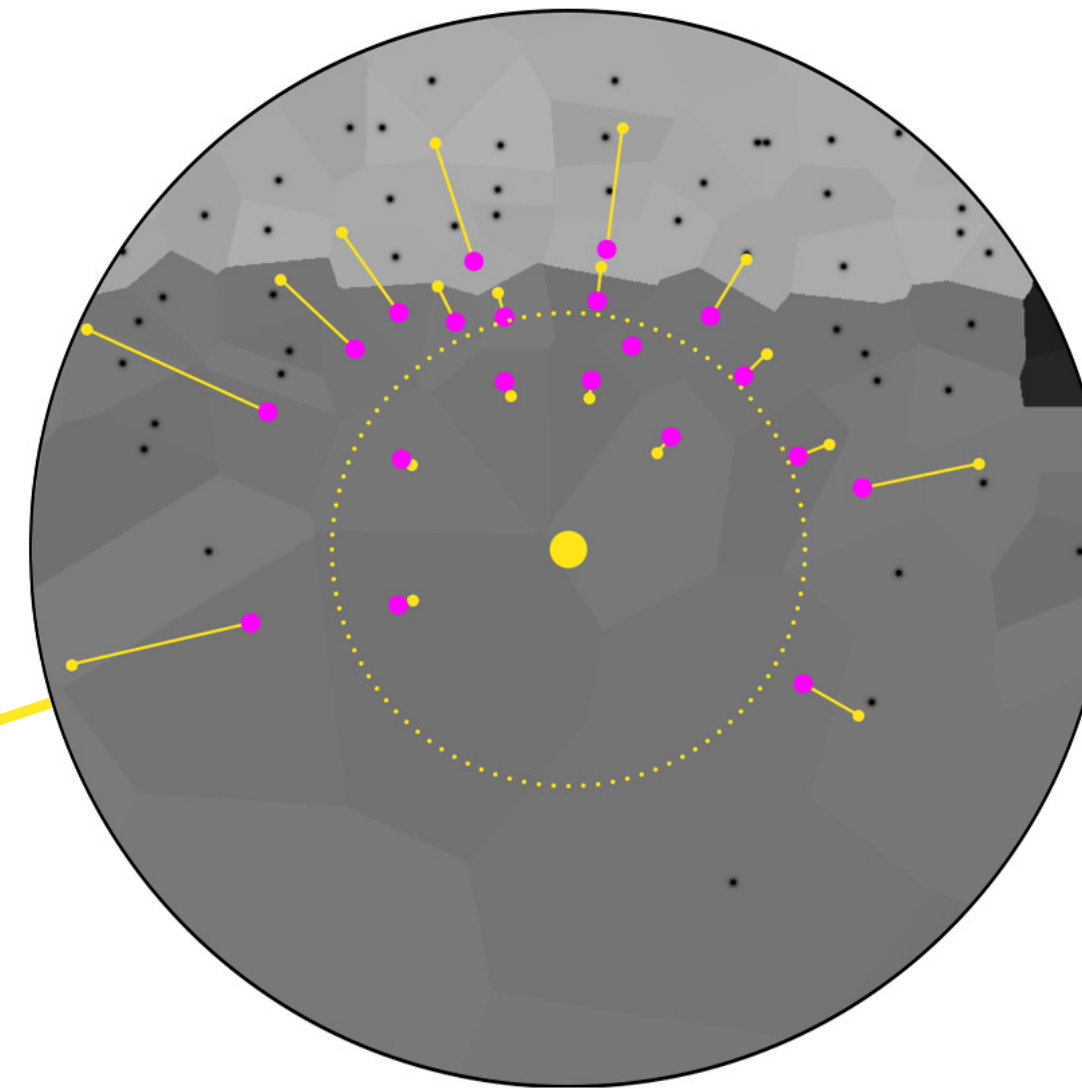
■ Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



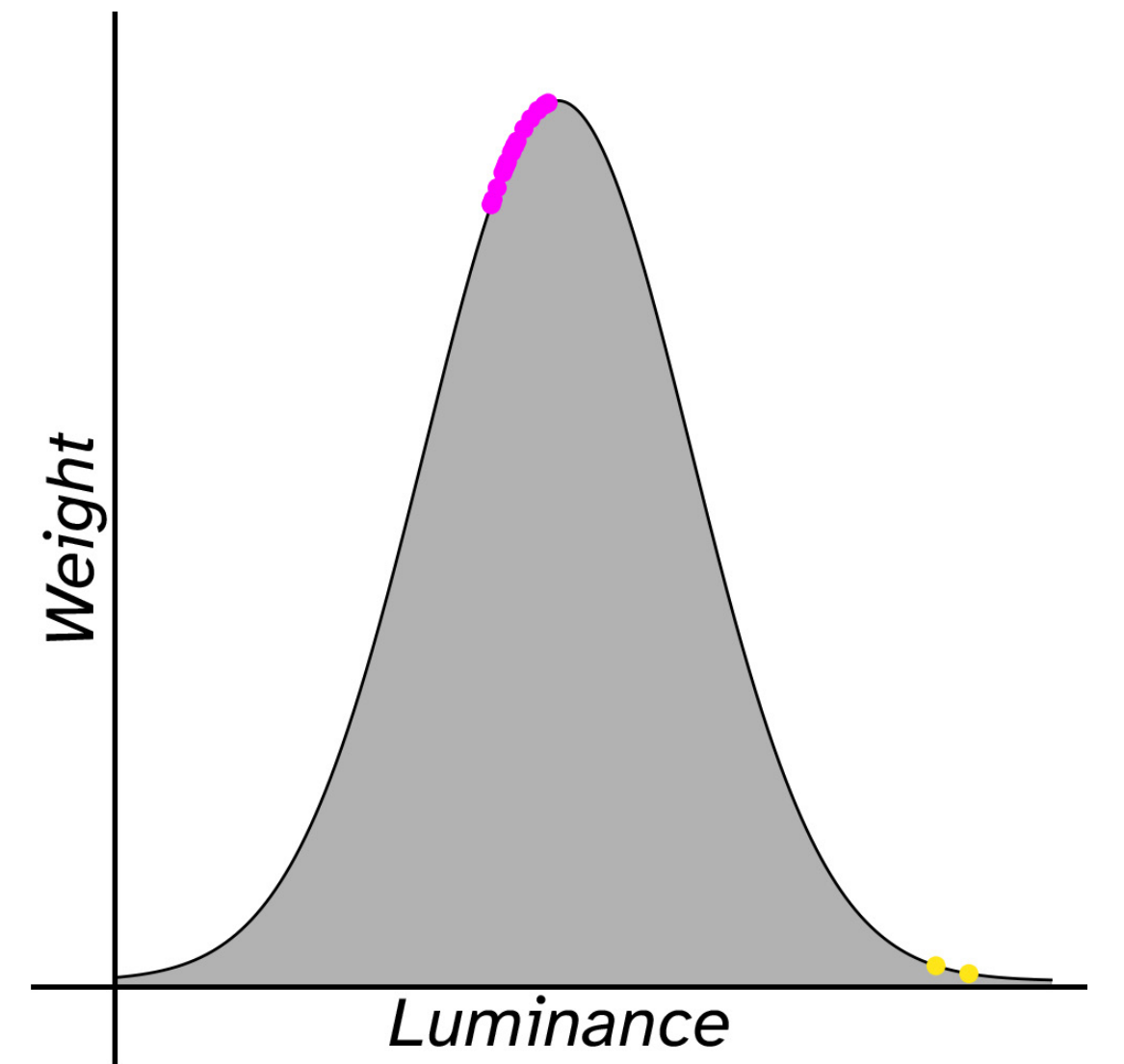
with geometry aware interpolation



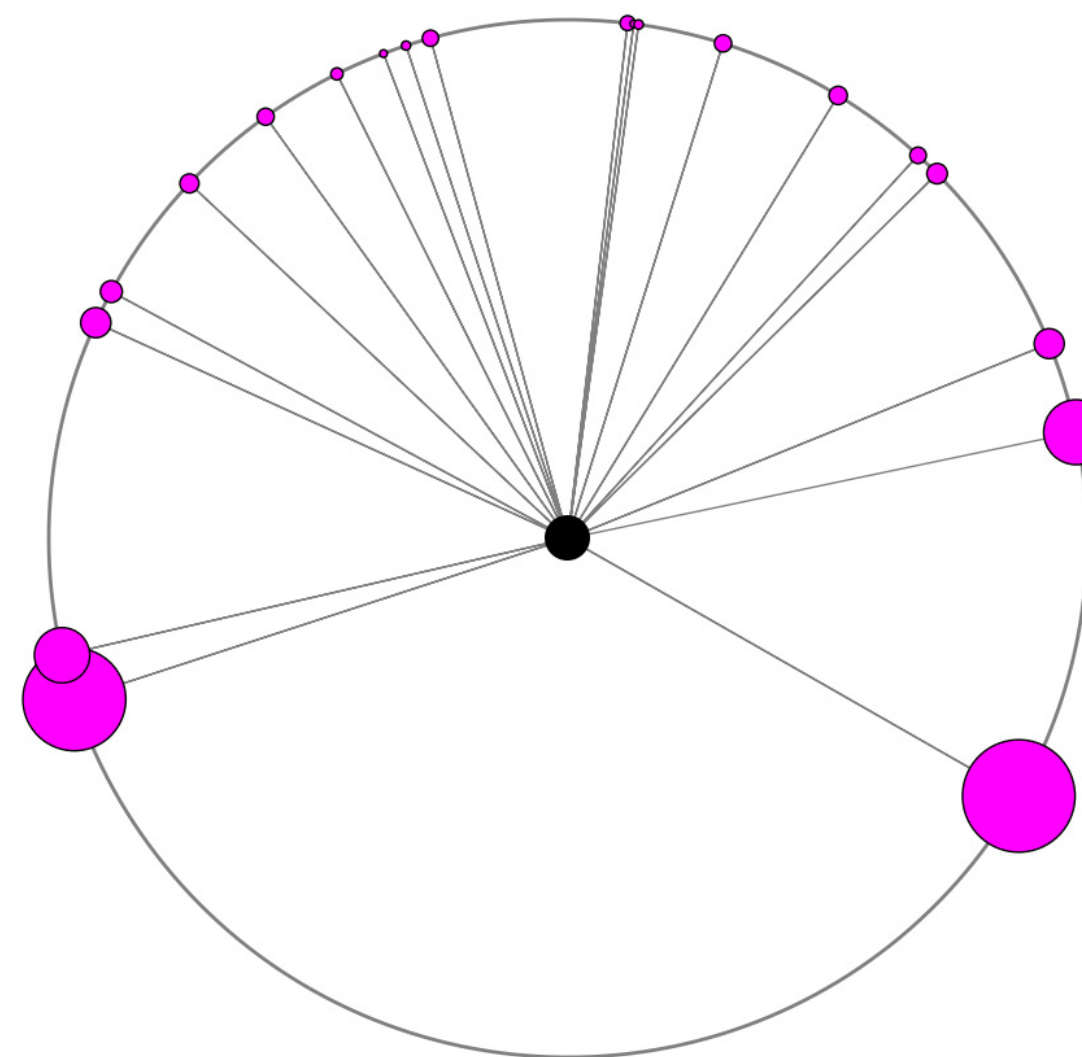
with geometry aware sampling



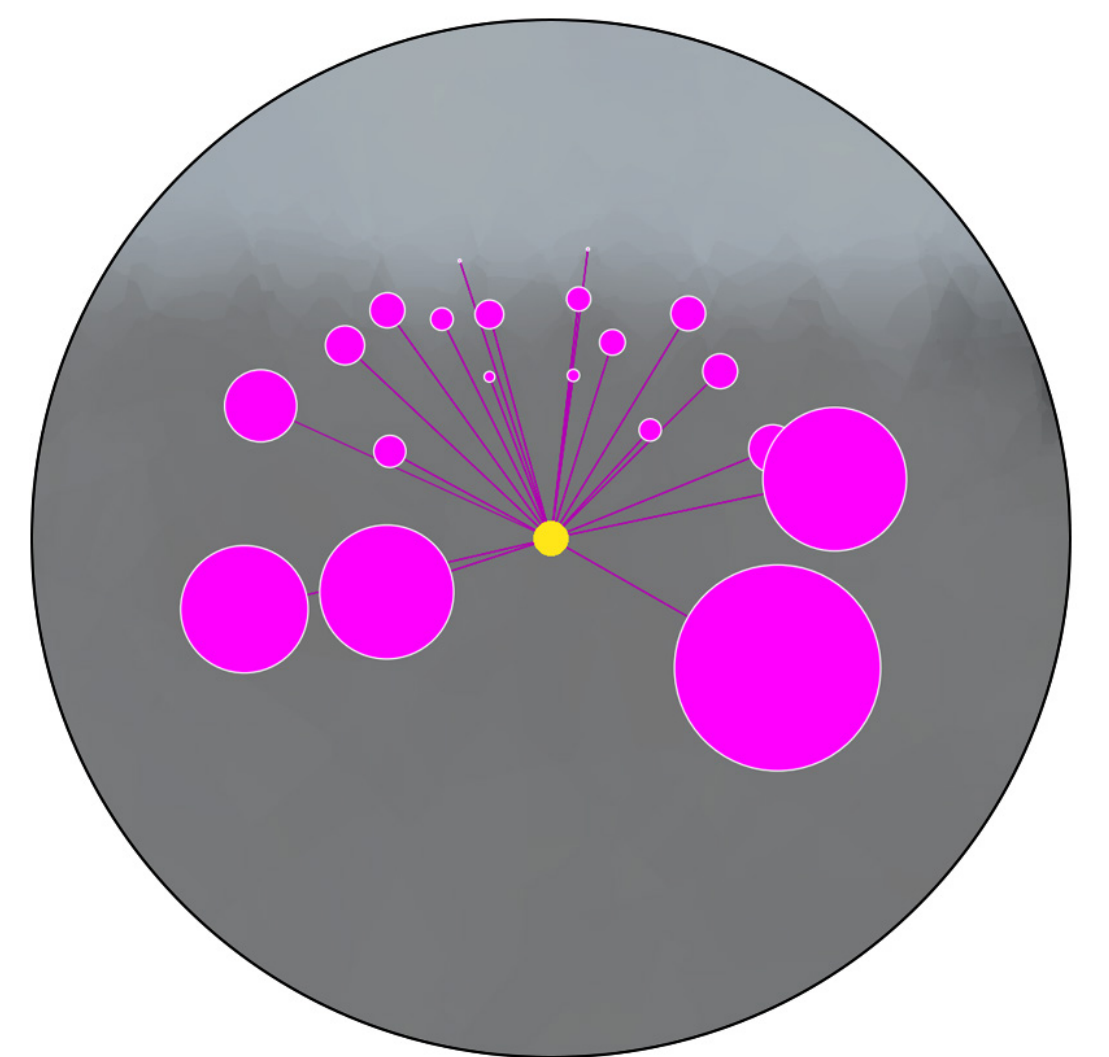
Weight samples by distance



Weight samples by luminance



Weight samples by local density

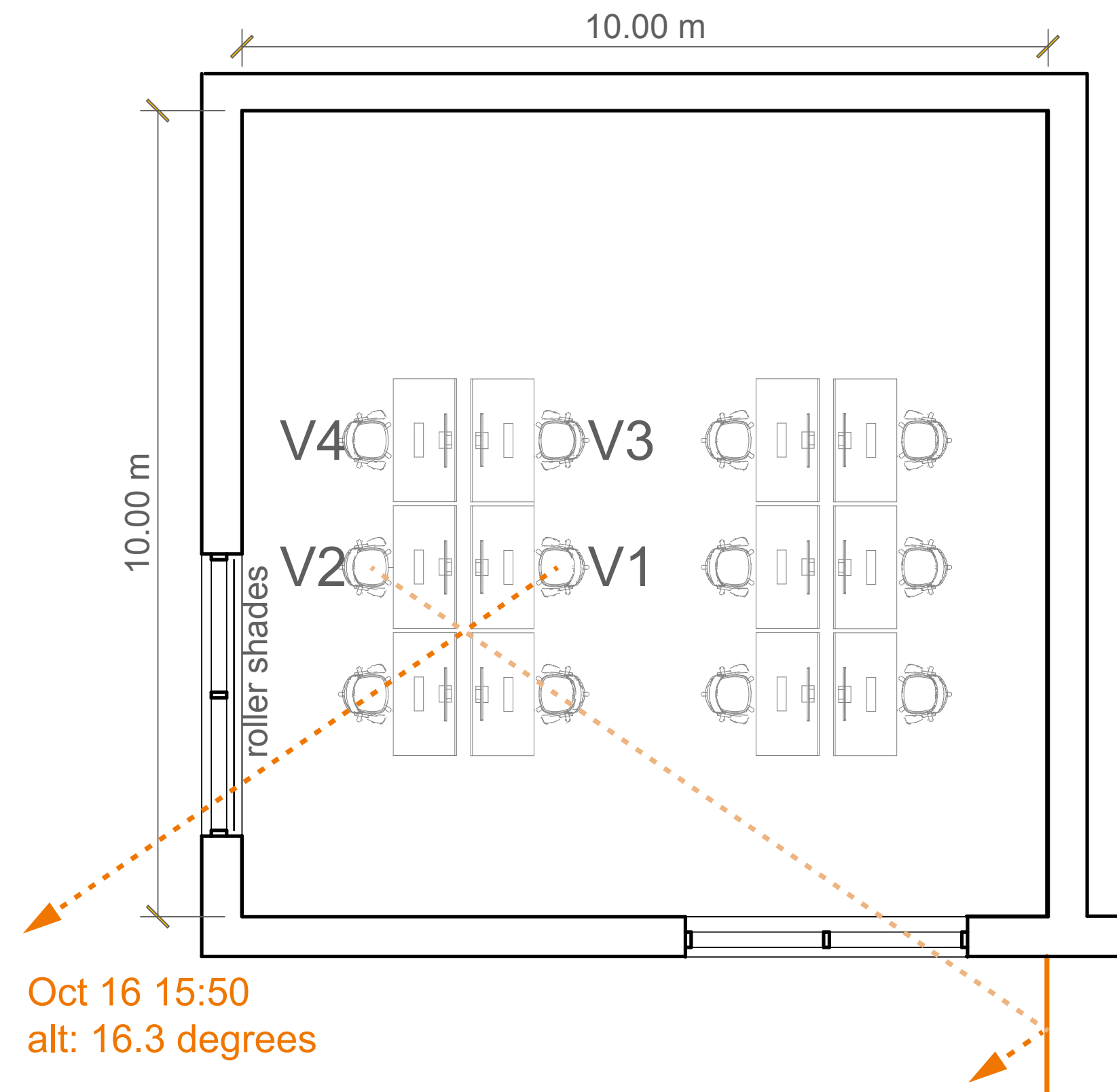


Combined weighting

# Reference images

```

rtppict -x 6000 -y 6000 -lw 1e-5 -st 0
-ss 16 -dc 1 -dt 0 -dj .8 -aa 0 -ad
2000 -as 0 -av 0 0 0 -ab 14 -lr -14 -u+
    
```



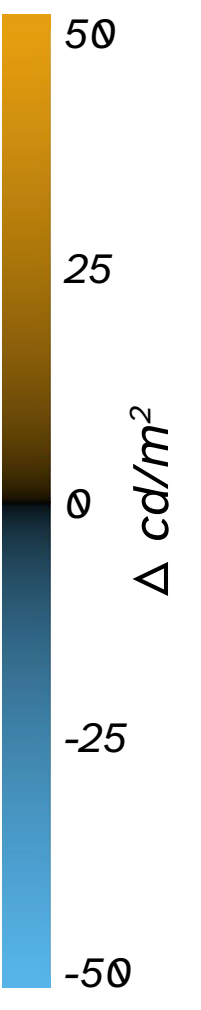
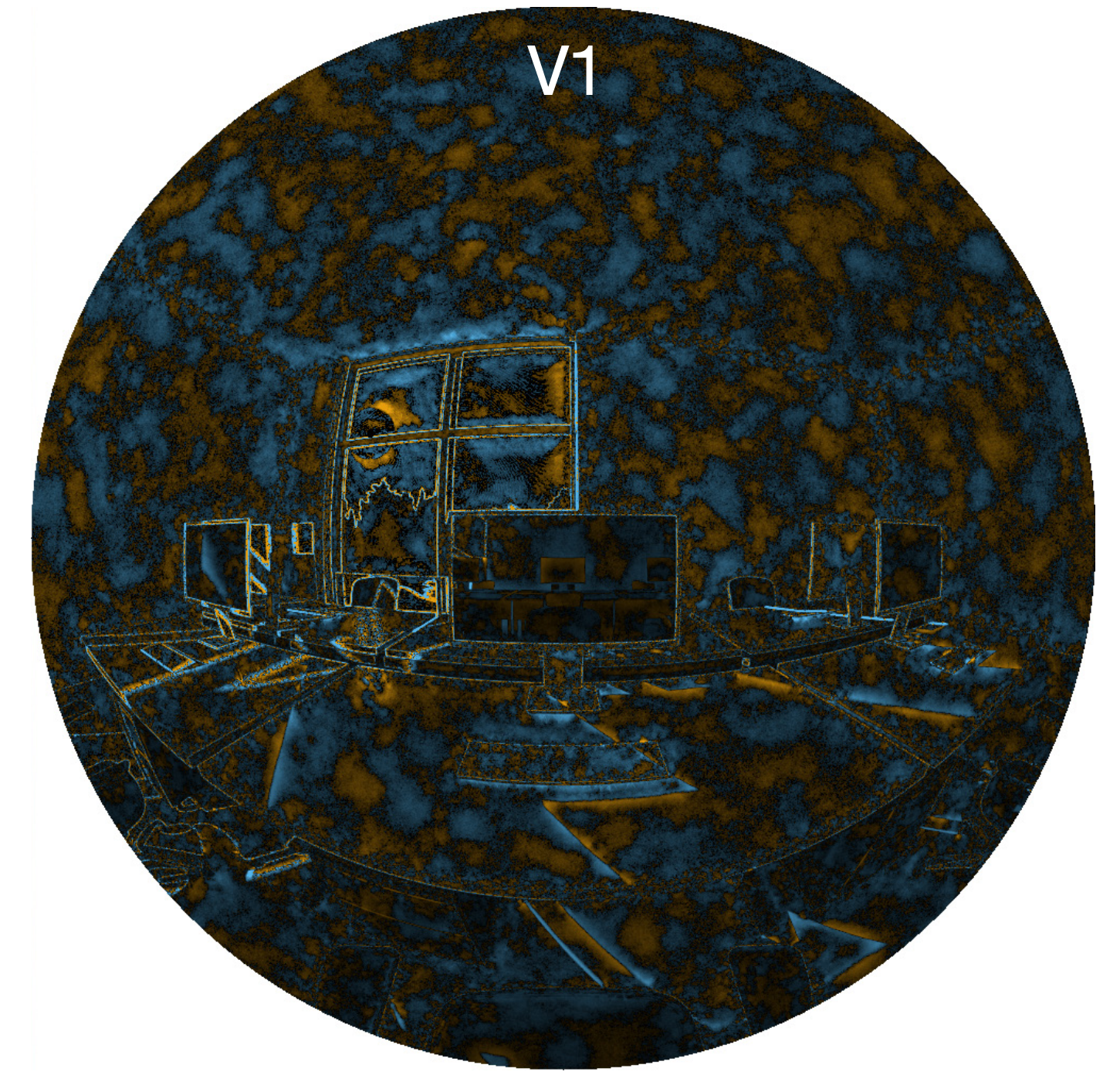
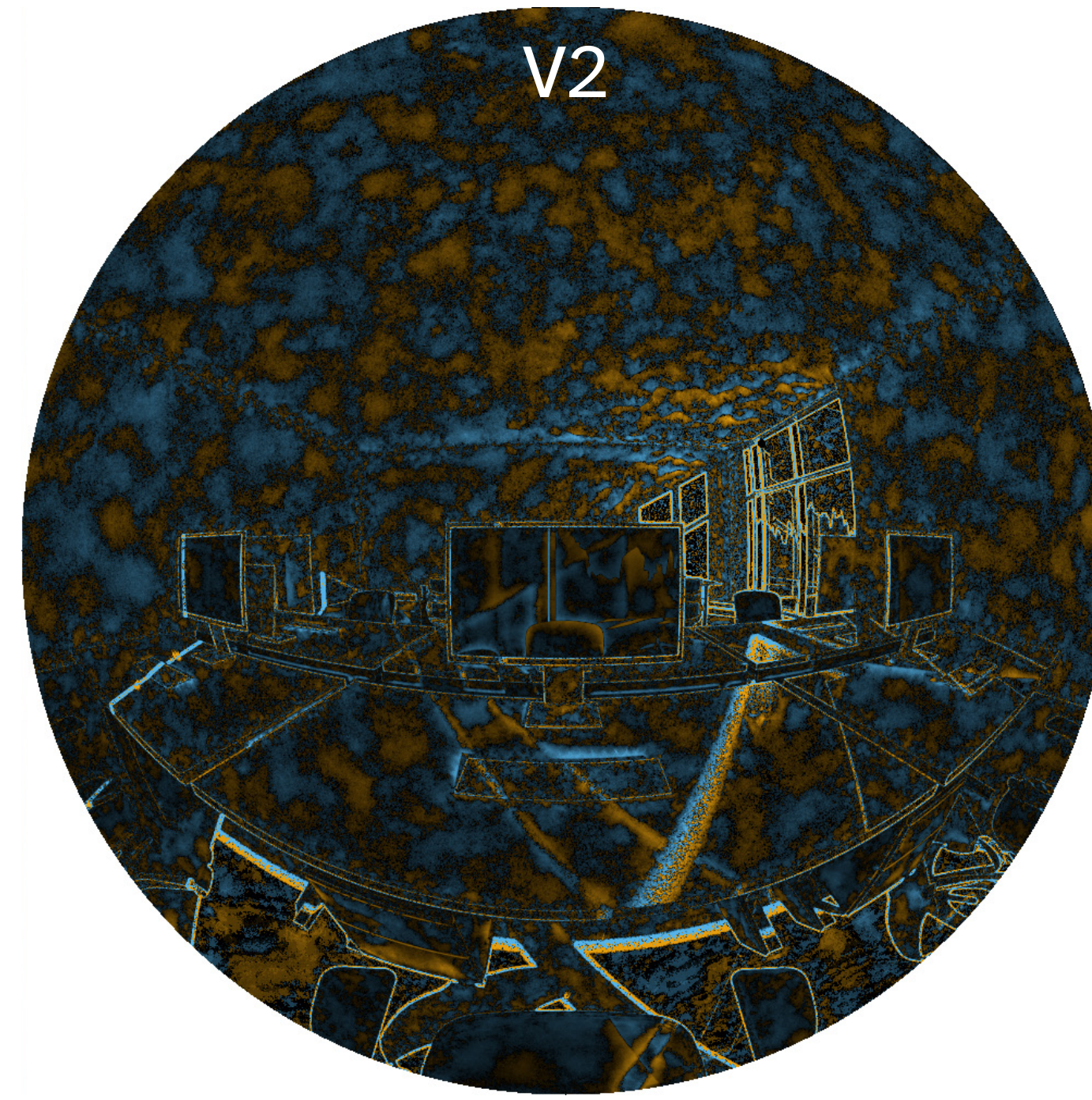
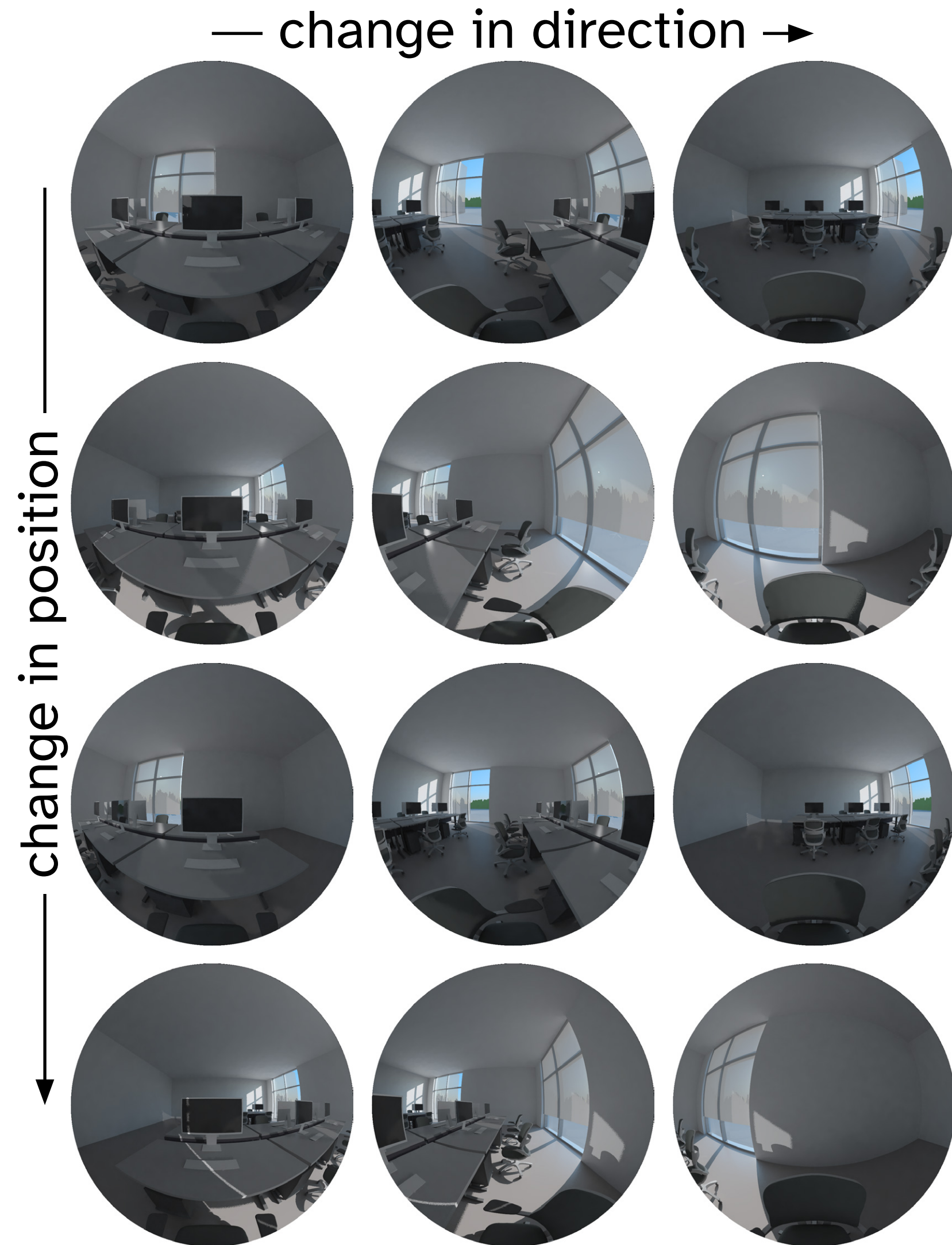
# Raytraverse images

threshold: 10 cd/m<sup>2</sup>

resolution: 128x64 - 2048x4096

rtrace settings: same as reference

Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation

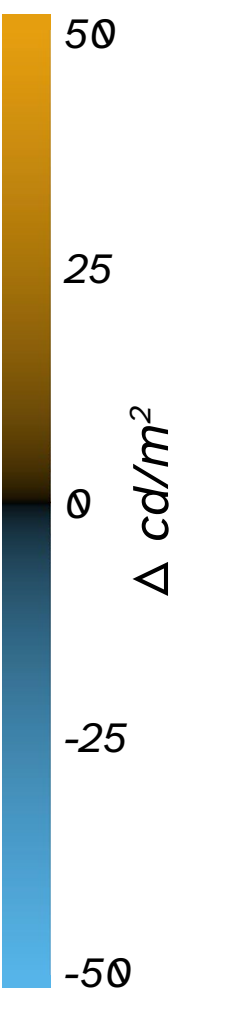
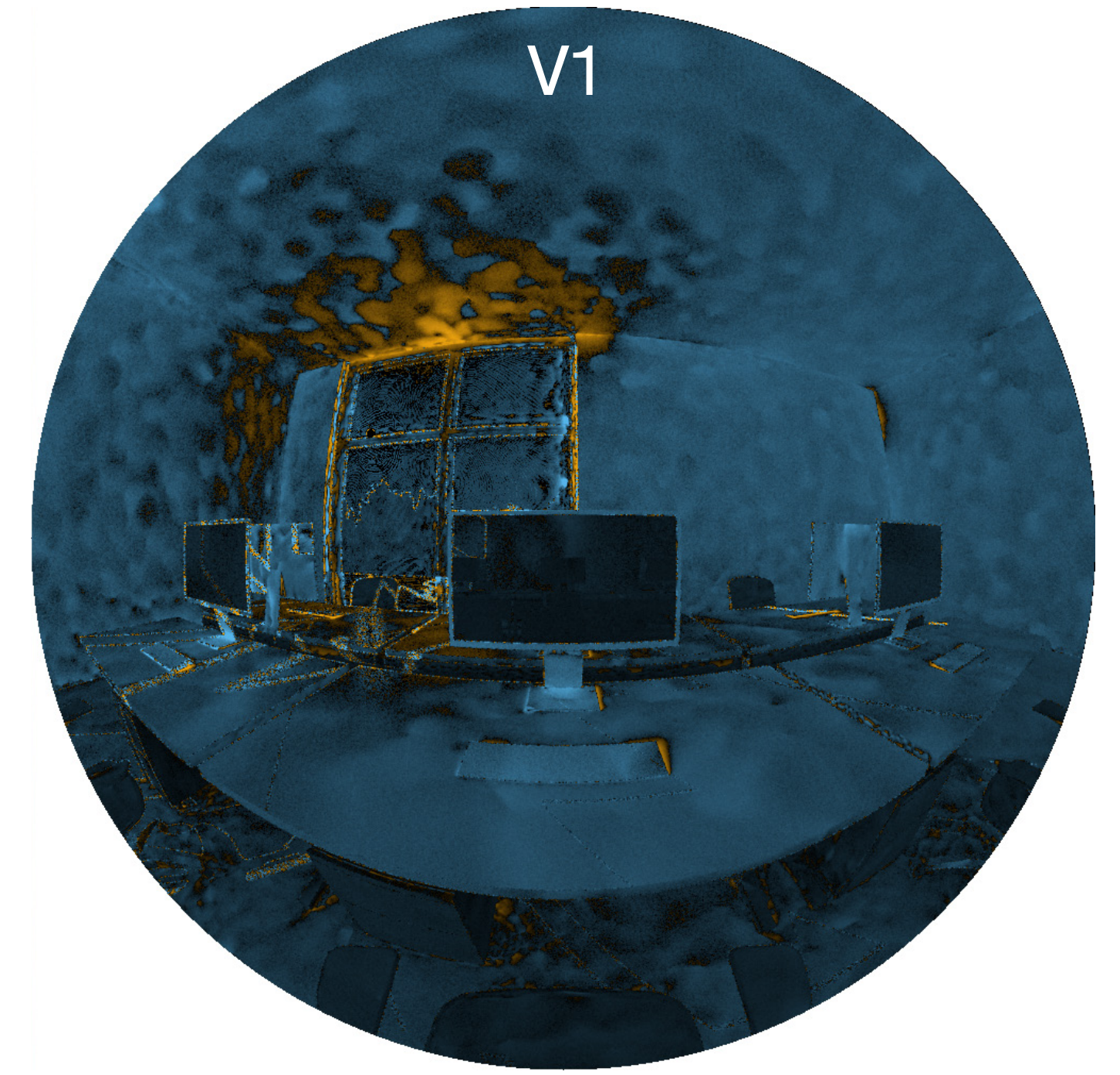
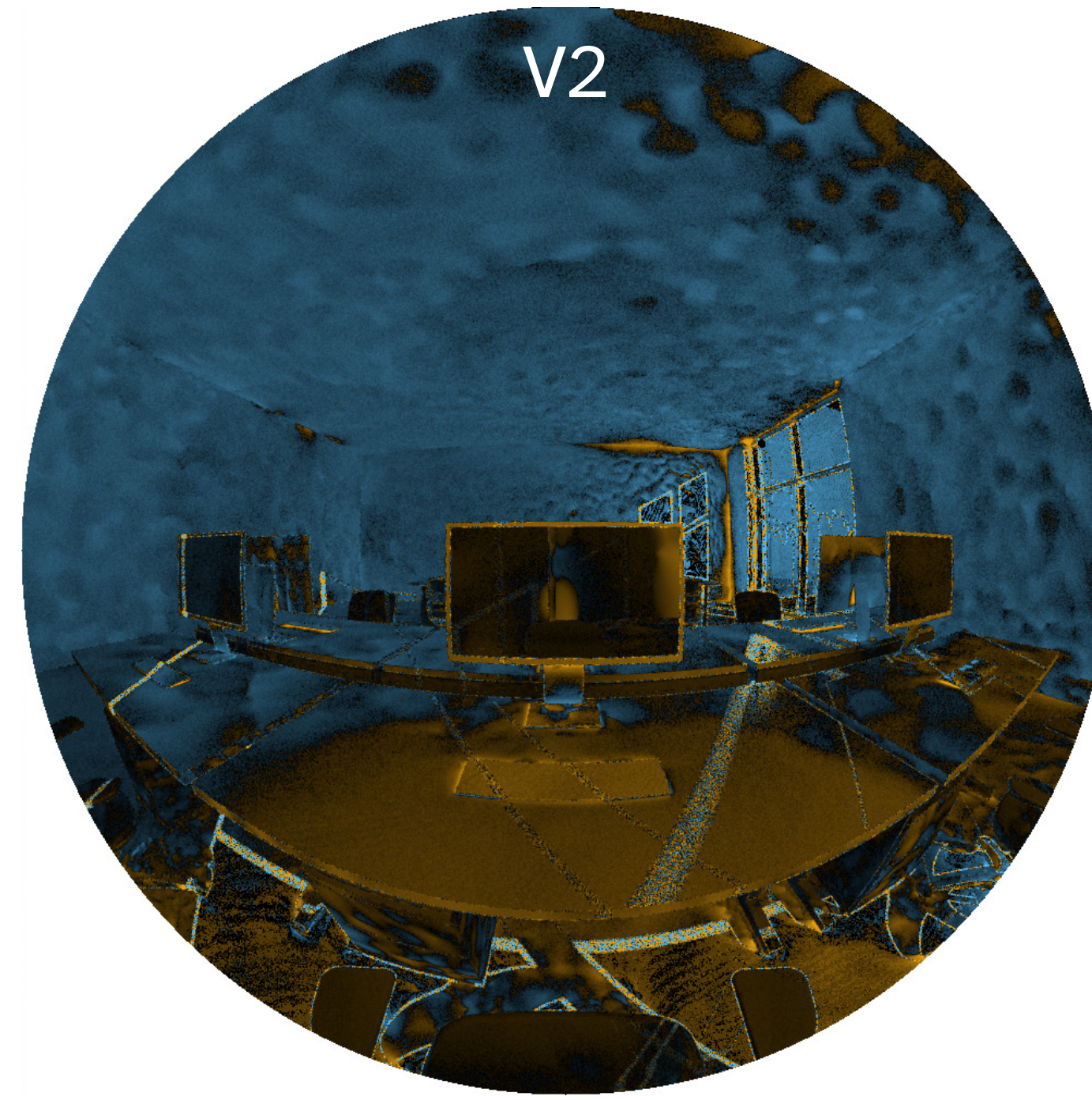
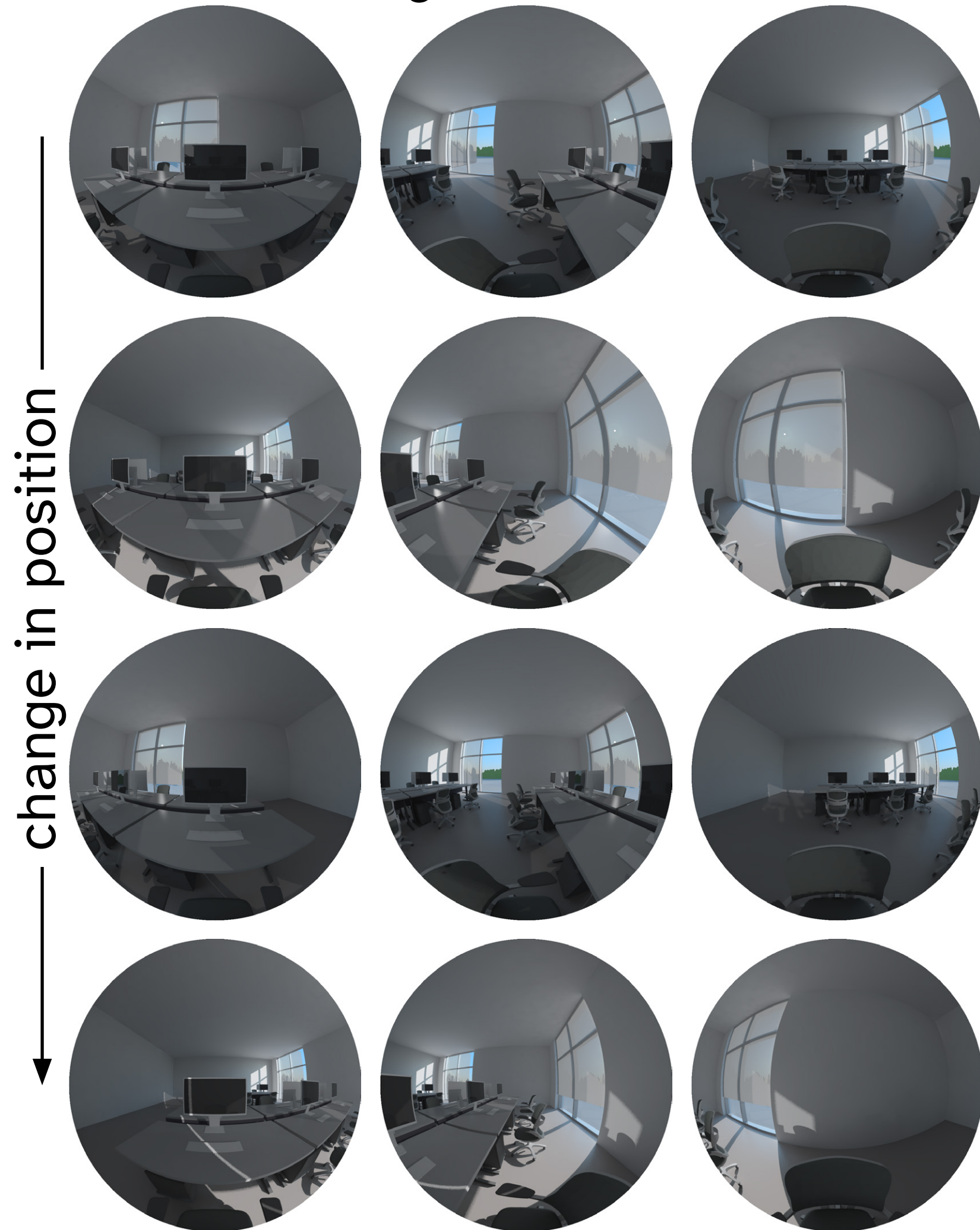




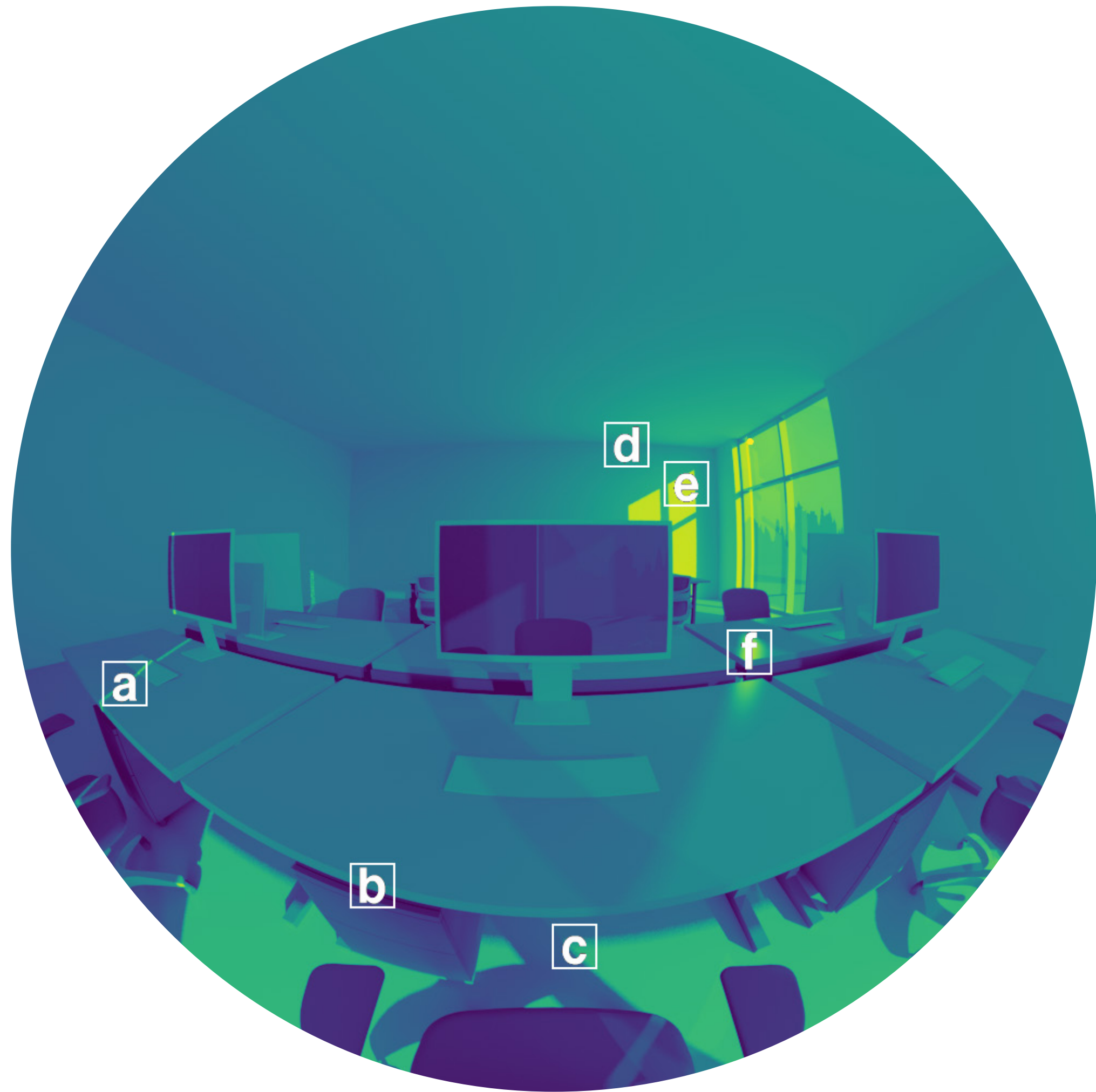
# Ambient cache images

```
rtpict -x 3000 -y 3000 -lw 1e-5 -st 0
-ss 16 -dt 0 -dc 1 -dj .8 -ds .2 -dp
4096 -aa .075 -ar 299 -ad 4096 -as 2048
-av 0 0 0 -ab 5 -af <af>
```

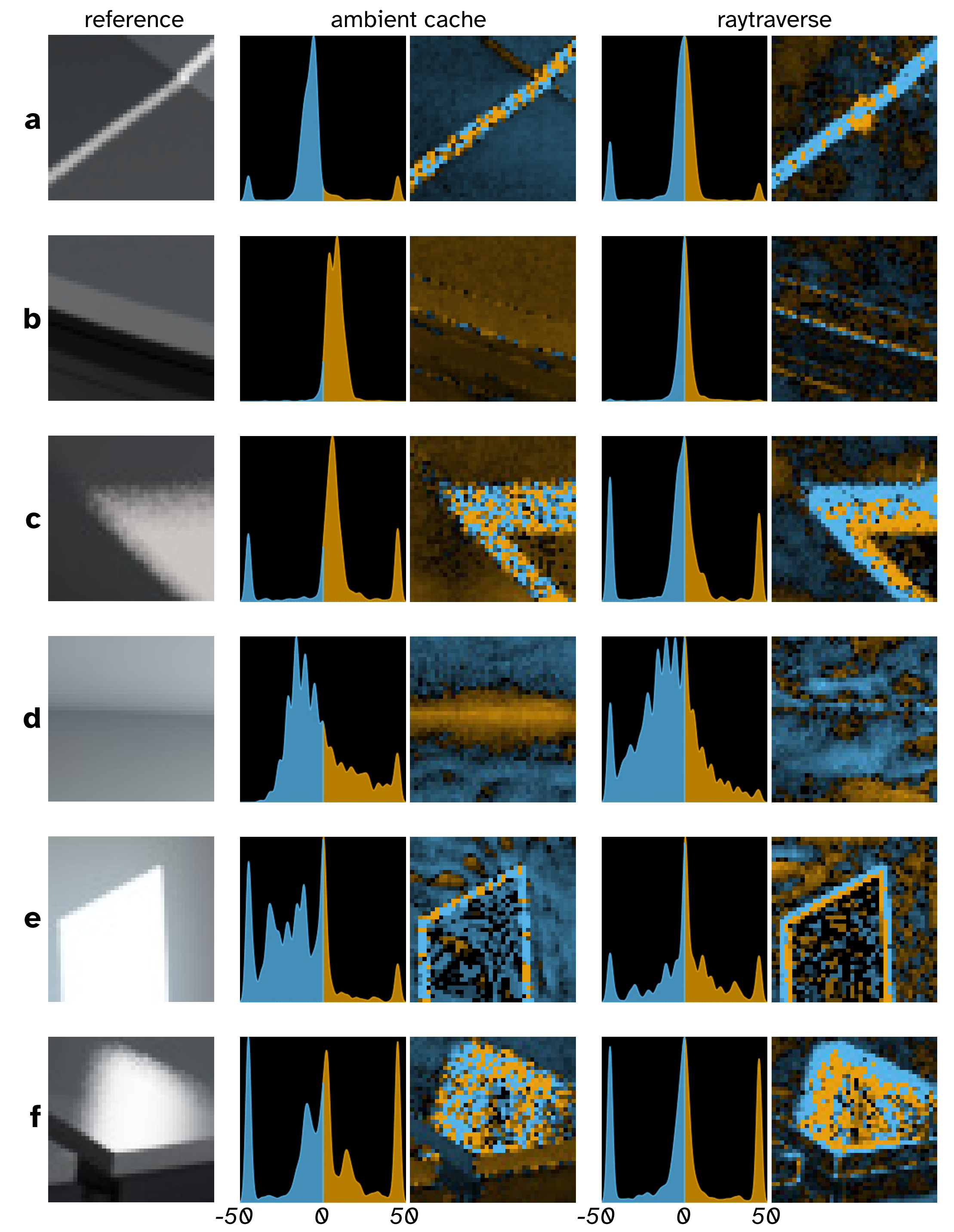
— change in direction →



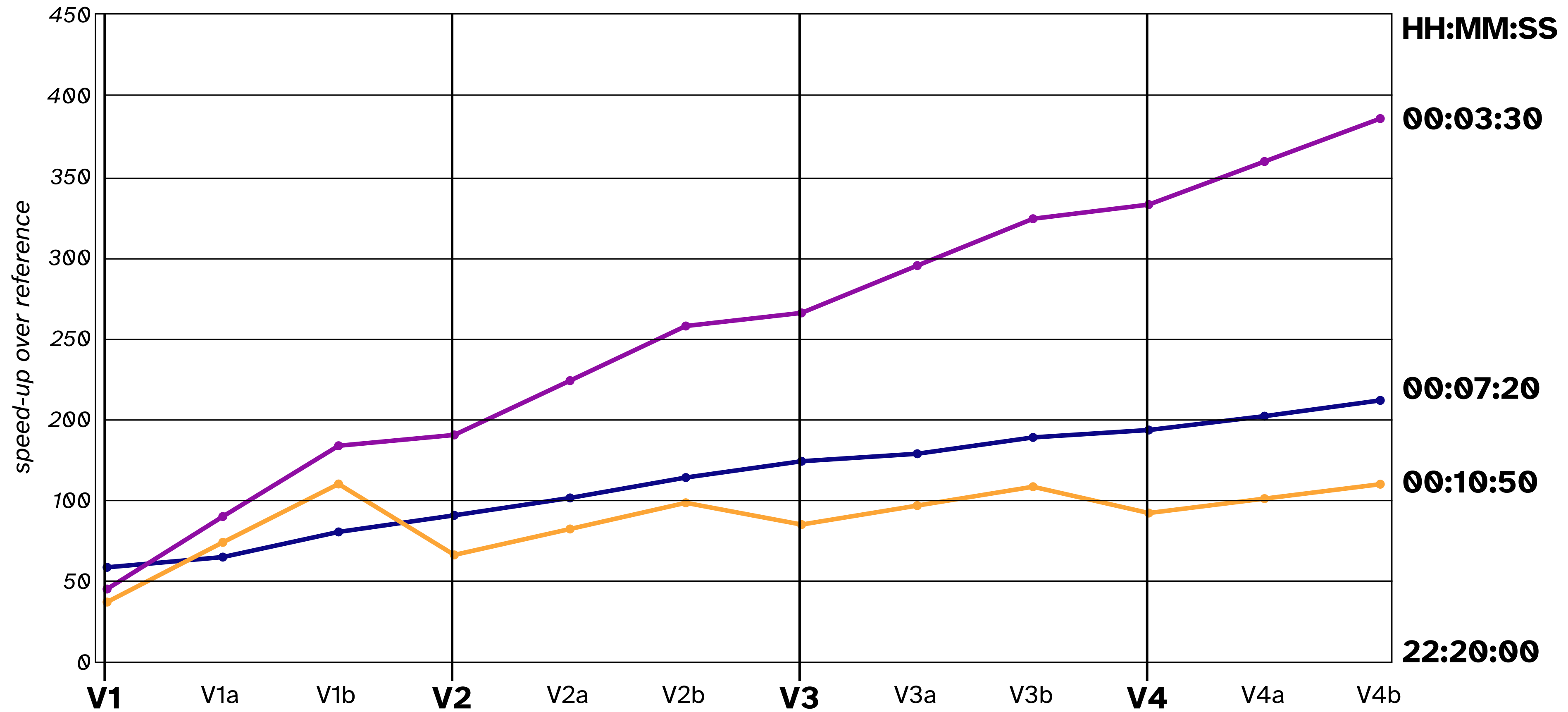
Traversing Time Dependent Light Fields  
for Daylight Glare Evaluation



reference



-50 0 50      -50 0 50



— raytraverse — ambient cache — combined

MSD: -0.6 -4.1 -3.7

MAE: 4.5 6.0 6.7

rMSE: 30.7 15.2 31.4

average across 4 views. units are  $cd/m^2$

